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SUSTAINABILITY, CREATIVITY AND INNOVATION IN PROJECT MANAGEMENT

– MODEL DEVELOPMENT FOR ASSESSING ORGANIZATIONAL PERFORMANCE THROUGH PROJECTS

Today a number of studies are published on how organizational strategy is developed and how organizations contribute to local and regional development through the realization of these strategies. There are also many articles dealing with the success of a project by identifying the criteria and the factors that influence them. This article introduces the project-oriented strategic planning process that reveals how projects contribute to local and regional development and demonstrates the relationship between this approach and the regional competitiveness model as well as the KRAFT concept.

There is a lot of research that focuses on sustainability in business. These studies argue that sustainability is very important to the success of a business in the future. The Project Excellence Model that analyses project success does not contain the sustainability criteria; the GPM P5 standard consists of sustainability components related either to the organizational level. To fill this gap a Project Sustainability Excellence Model (PSEM) was developed. The model was tested by interviews with managers of Hungarian for-profit and non-profit organizations. This paper introduces the PSEM and highlights the most important elements of the empirical analysis.

Keywords: **project-oriented strategic planning process, regional development, Project Excellence Model**

Today we are surrounded by projects that affect many areas of our lives. Large infrastructural investments – subway, bridge, railway and highway construction, building residential communities – are completed as projects. Large enterprises start projects to develop new products, services and to introduce them to the market. "Project" is also one of the most often used terms regarding the planning, organizing and hosting of international sporting and cultural events. The culture of projects has not only spread rapidly in the last few years among small- and medium-sized enterprises and the public sector in the member states of the European Union, but project management methods, techniques, and related knowledge used during these projects are also of extreme importance.

These projects have become part of organizational and regional development strategies. The purpose of projects is to contribute to the realization of organizational and regional development strategies and goals. The realization of organizational strategic goals affects the external environment in which the organization operates. The main challenge both for the top- and project managers is to be able to respond to the needs of external environment, and this depends on how these needs are identified.

These needs are becoming more closely related to sustainability and innovation. From a different perspective, the concept of sustainability and innovation has been linked to project management (Gareis et al., 2011; Silvius et al., 2012). There are several approaches in this field, some of which try to discover the relationship between project management, sustainability, and innovation (Silvius – Shipper, 2014; Daneshpour, 2015; Eskerod – Huemann, 2013). This paper represents the viewpoint that using an appropriate assessment tool to analyze projects is an efficient way to reveal such a relationship.

Tools and methods for analyzing and assessing projects have been developed over the last two decades. These examine what project leaders and other contributors have done in order to achieve a successful outcome. Also, tools can be used to measure to what extent the project satisfied the expectations of project stakeholders. Stakeholder expectations and the responses of

project management to them represent the traditional approach of project success. In recent years, besides the traditional magic triangle – cost, time and quality – sustainability and innovation became a matter of great importance regarding stakeholder expectations. All of these factors need to be taken into consideration both in project planning and in its realization. Thus, methods for analyzing and assessing projects should contain aspects of sustainability and innovation as well. This paper introduces a new method that was specifically developed to assess projects taking into account sustainability and innovation. Through the analysis of both for-profit and non-profit organizations, it also presents how to apply the method in practice.

Project-oriented strategic planning

There are several approaches to create an organizational strategy (Hunger – Wheelen, 2011). However, they all share a common feature that the foundation of a successful strategy is the analysis of internal conditions and the external environment. During the analysis of internal conditions, the strengths are collected and the weaknesses are faced, then an attempt is made to adjust these to the market opportunities and threats. The best solution in analyzing the external environment is to have an integrated approach to analyze the different environmental segments (legal, economic, political, cultural, and geographical). As a result of these analyses, a decision can be made on those business areas that the operation needs to focus on in the future (Luthans – Doh, 2012,).

The next step is the formulation of the vision and the mission. The vision describes the desired future state of the organization. It does not contain numerical values to be obtained, it rather outlines those conditions the organization will endeavor to achieve in the future. The mission is the formulation of the guidelines of the core of the organizational strategy and values which is the guiding principle for managers and employees. The vision and mission are essential because during the development of strategic goals, the determination of the operational and action plans, the development of the control system, the achievement of the goals and objective defined in the vision and mission need to be taken into consideration.

The organizational goals compared to the mission are more specifically defined. They are the core elements of the organizational management system (Luthans – Doh, 2012). The quantitative determination should be kept in mind when they are formed.

The organizational strategy and thus the strategic goals are related to different areas: customers (products and services, markets or market segments), financial (profit, income, cost), internal processes (effectiveness, productivity) and learning and growth (courses, trainings).

The strategic goals defined in the above mentioned target areas, can also be converted into specific, short-term operational plans. However, the market introduction of a new product or an organization of an international event has also great significance regarding the organizational success. Therefore, it is necessary to deal with these target areas from a strategic point of view. In these areas, the strategic goals can be accomplished as a series of projects, the purposes of which are aligned to strategic goals. The organizational strategic goals can be successfully achieved by the successful accomplishment of the projects conducted in the same target areas. The above presented system is called project-oriented strategic planning.

Figure 1

Project-oriented strategic planning

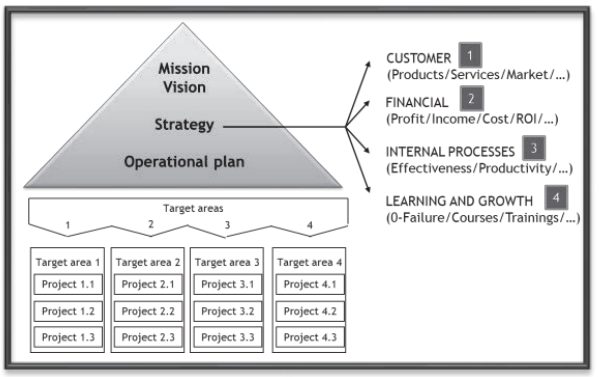


Figure 1 shows the relationship between single projects and the key target areas of strategic goals. The organizational project portfolio includes all those projects that have been identified in order to realize strategic goals. Projects in the project portfolio that need coordination because of their resource-based and/or result-based interdependency form part of a program (Görög, 2013). Thus projects in a program "are managed in a coordinated fashion in support of the portfolio" (PMBOK, 2015, p. 4.). The project-oriented strategic planning is consistent with the PMBOK approach that states "projects and programs within a portfolio are linked to the organization's strategic plan by means of the organization's portfolio" (PMBOK, 2015, p. 4.).

The project-oriented strategic planning is of high importance not only for for-profit companies, but for non-profit organizations as well. Reconstruction and renovation of public places, cultural and sporting events, festivals, and the introduction of new learning methods are examples of how non-profit organizations interpret these model when formulating their strategies.

Project-oriented strategic planning and regional competitiveness

Meyer-Stamer states that "we can define (systemic) competitiveness of a territory as the ability of a locality or region to generate high and rising incomes and improve the livelihoods of the people living there" (Meyer-Stamer, 2008, p. 7.). Meanwhile the WEF (World Economic Forum) definition of competitiveness focuses on the concept of productivity, this definition takes into consideration the benefits to people living in a region. Annoni and Dijkstra define regional competitiveness as "the ability to offer an attractive and sustainable environment for firms and residents to live and work" (Annoni – Dijkstra, 2013, p. 3.). Fehérvölgyi et al. (2012) stress that development of economy, commerce, and tourism, as well as environmental protection are the most important success factors of cross-border regional development.

Lengyel's model (2000) gives a systematic view of regional competitiveness by differentiating between basic categories, development factors and success determinants. Basic categories measure the regional competitiveness and include income created in the region, labour productivity and the rate of employment. The development factors of regional competitiveness have a direct, meanwhile the success determinants an indirect impact on these basic categories.

Figure 2 introduces the relationship between regional competitiveness and the successful realization of development projects of organizations operating in a region. Projects related to factors like R&D, human capital or large infrastructural development have a direct affect on regional competitiveness. Projects contributing to social, economic or environmental improvements through the realization of organizational strategies can have an impact on the basic categories in the long run.

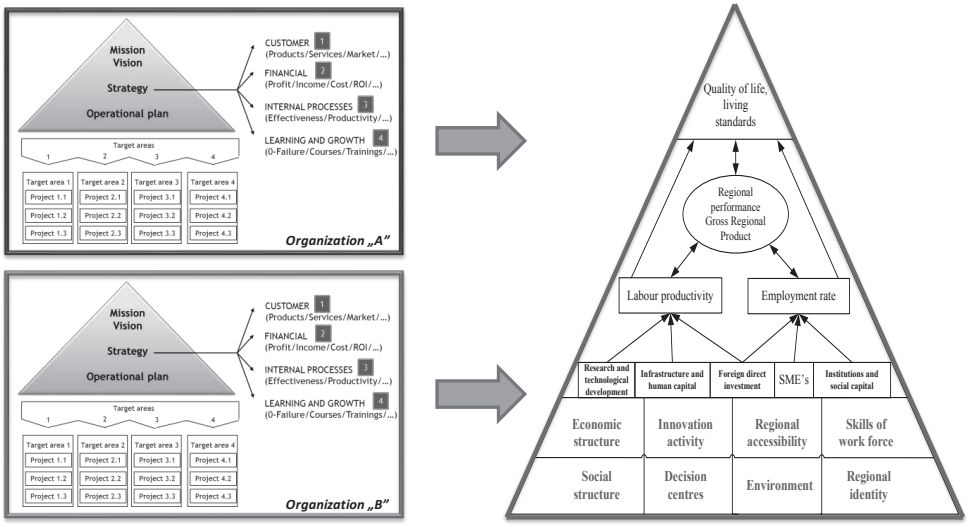
Project-oriented strategic planning, sustainability and innovation

Research on the success of projects and project management is abundant. Most of such work try to define success by identifying the criteria for success, the most important success factors, and the relationship between factors and criteria (e.g. Belassi – Tukel, 1996; Cooke-Davies, 2002; Gemünden – Lechler, 1997; Lim – Mohamed, 1999; Müller – Turner, 2007; Pinto – Slevin, 1988; Turner, 2000; Cserháti – Szabó, 2014; Görög, 2016; Blaskovics, 2016; Berényi, 2014; Deák, 2004).

There is also a wide range of publications dealing with different aspects of effective innovation management (e.g Wang – Ahmed, 2004; Martins – Terblanche, 2003; Elmquist et al., 2009; Chuang – Lin, 2015; van der Panne et al., 2003; Deutsch, 2014). Models for the assessment of different aspects of organizational innovation are also available. One approach to rate and improve the organizational capability to innovate is the application of the Innovation Capability Maturity Model (ICMM). The Innovation Management Maturity Model by Planview (Nauyalis, 2013) enables the measurement of the organization's current and desired innovation management maturity across people, processes and tools.

Figure 2

The relationship between the project-oriented strategic planning and the regional competitiveness



A lot is being written on sustainability in business as well. According to the UN Global Compact – Accenture CEO Study on Sustainability (2013) survey, 93% of CEOs believe that "sustainability will be important to the future success of their business" (Lacy – Hayward, 2013, p. 11.). The Accenture 2010 Report had already stated "CEOs believe that we are moving toward an era in which businesses will no longer focus purely on profit and loss as the primary means of valuation. Rather, [they

will] take into account also the positive and negative impacts on society and the environment" (Lacy et al., 2010, p. 10.).

In the course of the survey and conversations with CEOs, researchers witnessed a fundamental shift since the previous Global Compact survey in 2007. "Then, sustainability was just emerging on the periphery of business issues, an increasing concern that was beginning to reshape the rules of competition. Three years later, sustainability is truly top-of-mind for CEOs around the world. While environmental, social and governance challenges continue to grow and CEOs wrestle with competing strategic priorities, sustainable business practices and products are opening up new markets and sources of demand; driving new business models and sources of innovation; changing industry cost structures; and beginning to permeate business from corporate strategy to all elements of operations" (Lacy et al., 2010, p. 10.).

According to a study by MIT Sloan Management Review and The Boston Consulting Group Report 2009, 68% of business leaders cited improved financial returns as a benefit of their organization's investments in socially responsible practices (Berns et al., 2009).

However, a research conducted by Bonn and Fisher (2011) has demonstrated that many managers do not understand how to make their organizations more sustainable, even though they recognize the benefits of doing so. The framework developed by the authors suggests a way for managers to integrate sustainability into their strategies. It focuses on the strategic decision making process, including the strategy content at the corporate, business and functional levels.

Martens and De Carvalho (2013) state that project management and sustainability themes have been addressed by countless studies. According to studies, initiatives aiming at integrating these two themes are already in progress (Anning, 2009; Bodea et al., 2010; Fernández-Sánchez – Rodríguez-López, 2010; Jones, 2006; Mulder – Brent, 2006; Turlea et al., 2010; Vifell – Soneryd, 2012), but much additional research is required to develop tools, techniques and methodologies (Singh et al., 2012; Thomson et al., 2011) that can be applied in project management in order to analyze sustainability at the project level (Cole, 2005; Deakin et al., 2002; Thomson et al., 2011).

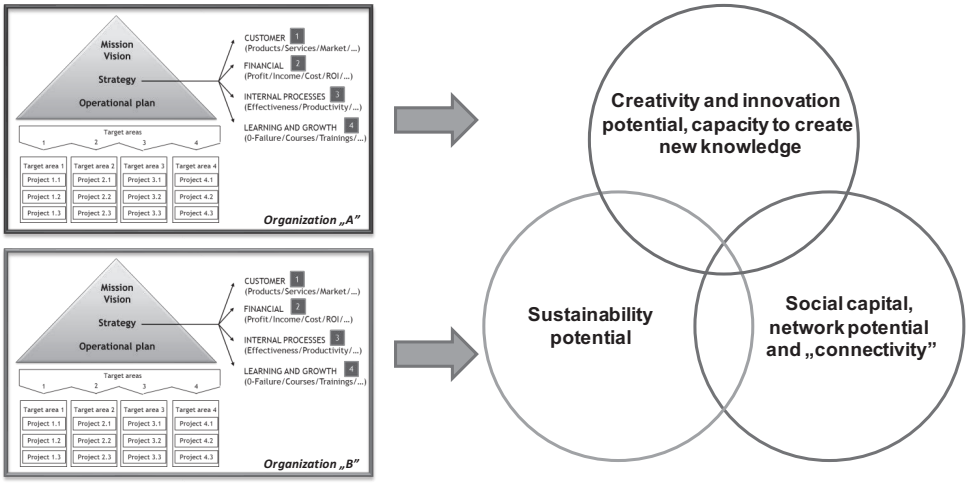
Despite this abundance of publications, there is still a lack of a complex model that accounts for the sustainability, creativity and innovation of projects. The current paper develops such an integrated model and provides examples for its practical applications. This aspect is closely linked to the concept of "Creative Cities and Sustainable Region" developed by Miszlivetz et al. (Miszlivetz – Jensen, 2015; Miszlivetz – Márkus, 2013a; Miszlivetz – Márkus, 2013b), especially related to the dimensions of creativity and innovation potential as well as to potential for sustainability. The Creative City – Sustainable Region is a relatively new concept that "perceives effective regional cooperation among economic and social actors as the measure of successful investment and development" (Miszlivetz – Márkus, 2013a, p. 5.).

The KRAFT Index not only proposes an integrated analytical framework that "enables the collective recognition of individual (i.e., corporate, governmental, academic) and common interests", but also provides "the framework for a more complex and profound understanding of the middle- and long-term development aims of dominant actors" (Miszlivetz – Márkus, 2013a, p. 5.). This integrated approach is the key to future success and socio-economic and ecological sustainability.

Figure 3 indicates the relationship between the KRAFT concept and project-oriented strategic planning. Projects like renovation and infrastructure development, the organization of musical and sporting events, product and service development, R&D projects are examples of how projects are directly linked to the elements of the KRAFT concept.

Figure 3

The relationship between the KRAFT concept and the project-oriented strategic planning



The aim of research

The aim of the research is to develop a model to assess how projects become successful by contributing to realization of strategic goals and to local and regional development.

The main focus is on the following key areas:

Sustainability: the aim is to reveal how projects contribute to organizational, local and regional economic and social development, as well as to the environmental protection.

Innovation: the aim is to discover the innovation potential of the projects and to analyze how different forms of innovation contribute to organizational, local and regional economic and social development as well as to environmental protection.

***Creativity*:** the aim is to explore how sustainability and innovation are supported by the degree, extent and intensity of individual, organizational and social creativity.

Figure 4 highlights the integrated approach of the research. The innovative aspect of this model is in the multidimensional analysis of project contribution to organizational, local and regional development focusing on innovation, sustainability and creativity.

Selected theories for model development

The GPM P5 Standard

The Project Sustainability Excellence Model (PSEM) was developed based on two models.

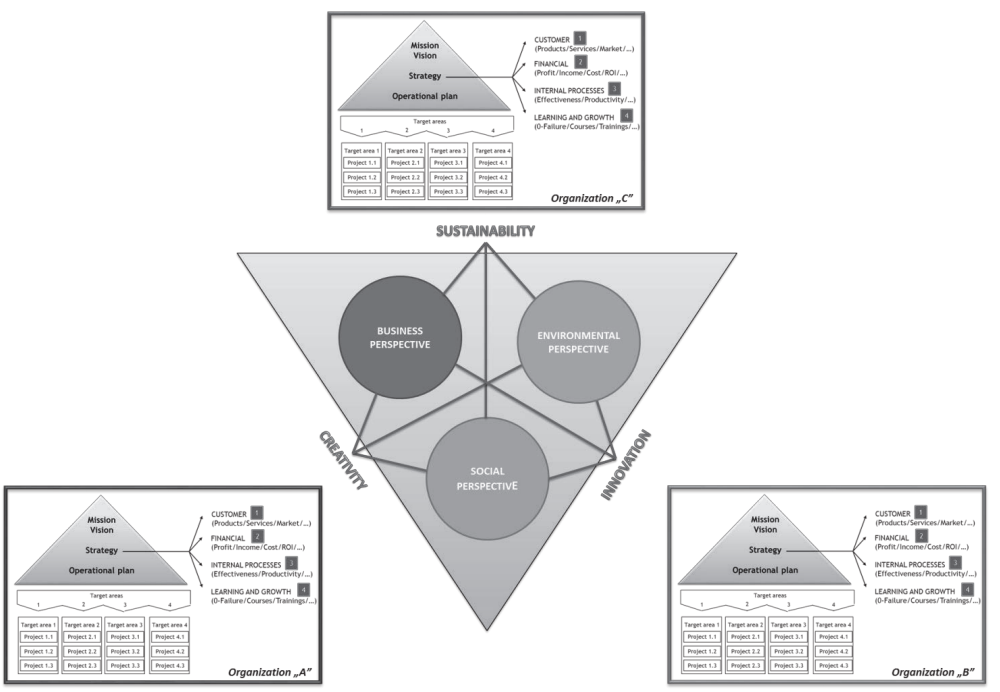
The GPM P5 Standard is a management tool that "supports the alignment of portfolios, programs and projects with organizational strategy for sustainability and focuses on the impacts of project processes and deliverables on the environment, society, the corporate bottom line and the local economy. The simplest way to explain P5 is that it is made up of bonds between the triple bottom line (fiscal, environmental, social) approach, project processes and the resulting products or services" (The GPM Global P5 Standard for Sustainability in Project Management, p. 6.).

Elkington coined the phrase "triple bottom line" in his book *Cannibals with Forks* (Elkington, 1997). He stressed that companies should manage three separate bottom lines:

- ✓ Profit: the traditional measurement of corporate success,
- ✓ People: how socially responsible an organization's operations are,
- ✓ Planet: how they impact the environment.

Figure 4

The innovative approach of the research



Although the concept describes the bottom lines in detail, it poses great challenge to create a system of measurement for them under the same terms.

P5 expands on the triple bottom line theory of project management. It contains a checklist that was developed at the 2010 IPMA® Expert Seminar, "Survival and Sustainability as Challenges to Projects".

P5 provides a "measurable framework for portfolios, programs and projects that are, by definition, unique and considered for inclusion to reports" (The GPM Global P5 Standard for Sustainability in Project Management, p. 10.).

The most important advantage of the P5 standard is that it is the first tool that provides a systematic framework for the analysis of company sustainability, but it creates difficulties when applied at the single project level. Meanwhile business sustainability criteria can be interpreted to different projects, environmental and social sustainability criteria analyze governance policies, organizational approaches, standards, processes and practices. These are very important factors but they appear at the organizational level and it is very difficult to interpret on a single project level.

The Project Excellence model

The EFQM Business Excellence Model was developed to improve the quality management of organizations. The EFQM model assesses the overall quality of an organization. However, project organizations differ from permanent organization, therefore a different model is needed for the assessment of projects. The Project Excellence model takes advantage of the EFQM model but it is more than a transformation of the EFQM model to project situations (Westerveld, 2003).

The Project Excellence model is a benchmarking tool that helps project teams to reflect on their own strengths and potential areas for improvement. The model is an adaptable and open concept which allows for many different approaches to projects.

The target for the Project Excellence Award applicants is to collect 1000 points. The model divides the assessment criteria into two sections of 500 points each: Project Management and Project Results.

Project Management criteria:

1. Project Objectives (140 points),
2. Leadership (80 points),
3. People (70 points),
4. Resources (70 points),
5. Processes (140 points).

Criteria of Project Results:

6. Customer Results (180 points),
7. People Results (80 points),
8. Results of other parties involved (60 points),
9. Key Performance and Project Results (180 points).

The IPMA annually presents project management awards to project management teams that exploit and can prove great achievements in project management. The IPMA International Project Excellence Award supports professional project management in achieving high performance in projects and identifies projects as examples of excellent project management. By rewarding teams that prove their success in project management, IPMA recognizes and acknowledges excellent and innovative projects. The IPMA Project Excellence Award motivates project teams to identify and optimize their strengths.

General benefits for the award applicants

- The Project Excellence Award is a unique form of benchmarking for project work.
- All award applicants receive an individual, detailed written benchmarking report from a team of qualified and experienced project experts in leading positions.
- The benchmarking report shows not only the strengths in project management but also indicates in which areas project work can be improved, which leads to better project results in the future.
- The benchmarking report also includes a comparison of the performance of the best project teams. (www.ipma.world)

The Project Excellence model enables an evaluation of projects based on a unified criterion-system, but sustainability is absent. According to the project-oriented strategic planning approach, project analyses has to encompass issues related to the planning and realization of strategic goals. Considering that organizational strategy focuses on sustainability and innovation, it provides the incentive for further development of the Project Excellence model, taking into account different perspectives of project sustainability as well as innovation.

The Project Sustainability Excellence Model (PSEM)

Based on the strengths, weaknesses and limitations of standards and models, the Project Sustainability Excellence Model (PSEM) was developed as an instrument to assess development projects that focuses on sustainability, creativity and innovation. The frame of the model is the Project Excellence Model in which the modified and reinterpreted GPM Global P5 Standard is integrated. The modification of the GPM Global P5 Standard means that the indicators which can be applied to projects have been put into the model without any changes, the indicators formulated in a very general way have been concretized and have been made project-related. In addition, new indicators have been created in order to cover all the areas of project-related sustainability, innovation and creativity. The PSEM contains 9 evaluation criteria and in each criterion questions are clustered into dimensions like sustainability, creativity and innovation. In some cases, business, environmental and social perspectives of sustainability appear independently.

PROJECT SUSTAINABILITY ASSESSMENT INSTRUMENT

1. PROJECT OBJECTIVES: To what extent is sustainability a feature for setting project objectives?

To what extent do the following issues appear in the project goals?

ECONOMIC SUSTAINABILITY

Return on Investment:
– Direct financial benefit/profit,
– Net Present Value,
– Cost/benefit ratio,
– Profitability index,
– Internal rate of return.

Meeting the project triangle:
– Meeting the deadline,
– Meeting the budget,
– Meeting the quality of the project outcome.

Business Agility:
– Agility/Flexibility in the project execution,
– Agility/Flexibility in the business operation.

ENVIRONMENTAL SUSTAINABILITY

Transport:
– Local procurement (local suppliers),
– Digital Communication (instead of paper based),
– Minimize the Travel,
– Minimize the Transport of Goods, Materials and Machines.

Energy:
– Minimize the Energy used throughout the Project Life Cycle,
– Minimize the Emission,
– Minimize the Energy the project's product will consume during its life span.

Waste:
– Minimize the waste,
– Use of recyclable materials and methods,
– Environmentally friendly disposal of waste.

Water:
– Minimize the Water used throughout the Project Life Cycle,
– Minimize the Water used during the utilization of the project's product,
– Recycle and purify before Disposal.

Materials:
– Minimize the waste of Materials,
– Apply reusable Materials,
– Use of Materials with less energy consumption.

SOCIAL SUSTAINABILITY

Labor Practices and Decent Work:
– Minimize Health and Safety Risks,
– Create new jobs for local people,
– Equal opportunities for employees.

Learning organization and knowledge management:
– Accumulation and documentation of project management knowledge.

Human Rights:
– Respect for Human Right.

Social development:
– Contribute to social development,
– Solve existing social problems,
– Satisfy the needs of the local society,
– Contribute to social wealth.

To what extent are the project goals characterized by the following statements?

INNOVATION

– Technical innovation in the product / service / construction / other project outcome,
– Process innovation in the project outcome,
– Marketing innovation in the project outcome.

CREATIVITY

– Creativity tools and technics are applied in the idea generation during the planning phase,
– Business and financial problems have been identified,
– Creative solutions for identified problems have been developed,
– Opportunities and threats have been identified and these have been used in the construction of the project strategy.

2. PROJECT LEADERSHIP: Is sustainability an important issue for the project leadership? How do managers support and promote sustainability during the project life cycle?

To what extent does the project leadership pay attention to

– reaching the financial goals?
– the improvement of environmental protection?

– the contribution to the social development?
– fostering innovation?
– support creativity and creative solution?

3. PEOPLE: How are project team members involved in the sustainability of the project, how is their potential seen and utilized?

To what extent are the following issues taken into consideration when project team members are selected?

– They should be able to reach the expected financial results.
– They should work environmentally friendly.
– They should have social sensibility.
– They should know or be able to get to know existing social problems and to identify social needs.
– They should be innovative.
– They should be creative.

4. RESOURCES: How are existing resources used effectively and efficiently from the point of view of sustainability as well as innovation and creativity?

How effectively does the project use financial resources in order to

SUSTAINABILITY
– increase the business sustainability of the project?
– increase the environmental sustainability of the project?
– increase the social sustainability of the project?

INNOVATION
– to promote technical innovation in the product / service / construction / other project outcome,
– to promote process innovation in the project outcome,
– to promote marketing innovation in the project outcome.

CREATIVITY
– apply creativity tools and technics in the idea generation during the planning phase,
– identify business and financial problems,
– develop creative solution for the identified problems,
– identify opportunities and threats and to use these for setting up the project strategy.

How effectively does the project use information as a resource in order to

SUSTAINABILITY
– increase the business sustainability of the project?
– increase the environmental sustainability of the project?
– increase the social sustainability of the project?

INNOVATION
– to promote technical innovation in the product / service / construction / other project outcome,
– to promote process innovation in the project outcome,
– to promote marketing innovation in the project outcome.

CREATIVITY
– apply creativity tools and technics in the idea generation during the planning phase,
– identify business and financial problems,
– develop creative solution for the identified problems,
– identify opportunities and threats and to use these for setting up the project strategy.

How effectively does the project use services of the project suppliers in order to

SUSTAINABILITY
– increase the business sustainability of the project?
– increase the environmental sustainability of the project?
– increase the social sustainability of the project?

INNOVATION
– to promote technical innovation in the product / service / construction / other project outcome,
– to promote process innovation in the project outcome,
– to promote marketing innovation in the project outcome.

CREATIVITY
– apply creativity tools and technics in the idea generation during the planning phase,
– identify business and financial problems,
– develop creative solution for the identified problems,
– identify opportunities and threats and to use these for setting up the project strategy.

5. PROCESSES: How do important processes support project sustainability?

To what extent did important processes of the project support the realization of the following goals?

ECONOMIC SUSTAINABILITY
– Return on Investment:
– Direct financial benefit / profit,
– Net Present Value,
– Cost/benefit ratio,
– Profitability index,
– Internal rate of return.

Meeting the project triangle:
– Meeting the deadline,
– Meeting the budget,
– Meeting the quality of the project outcome.

Business Agility:
– Agility/Flexibility in the project execution,
– Agility/Flexibility in the business operation.

ENVIRONMENTAL SUSTAINABILITY

Transport:
– Local procurement (local suppliers),
– Digital Communication (instead of paper based),
– Minimize the Travel,
– Minimize the Transport of Goods, Materials and Machines.

Energy:
– Minimize the Energy used throughout the Project Life Cycle,
– Minimize the Emission,
– Minimize the Energy the project's product will consume during its life span.

Waste:
– Minimize the waste,
– Use of recyclable materials and methods,
– Environmentally friendly disposal of waste.

Water:
– Minimize the Water used throughout the Project Life Cycle,
– Minimize the Water used during the utilization of the project's product,
– Recycle and purify before Disposal.

Materials:
– Minimize the waste of Materials,
– Apply reusable Materials,
– Use of Materials with less energy consumption.

SOCIAL SUSTAINABILITY

Labor Practices and Decent Work:
– Minimize Health and Safety Risks,
– Create new jobs for local people,
– Equal opportunities for employees.

Learning organization and knowledge management:
– Accumulation and documentation of project management knowledge.

Human Rights:
– Respect for Human Right.

Social development:
– Contribute to social development,
– Solve existing social problems,
– Satisfy the needs of the local society,
– Contribute to social wealth.

INNOVATION
– Technical innovation in the product / service / construction / other project outcome,
– Process innovation in the project outcome,
– Marketing innovation in the project outcome.

CREATIVITY
– Creativity tools and technics are applied in the idea generation during the planning phase,
– Business and financial problems have been identified,
– Creative solutions for identified problems have been developed,
– Opportunities and threats have been identified and these have been used in the construction of the project strategy.

6. Customer Results: What did the project achieve regarding customer expectations and satisfaction considering project sustainability?

To what extent did the project achieve customer satisfaction?

ECONOMIC SUSTAINABILITY
– Provided the project outcome at a suitable value-price relation.

ENVIRONMENTAL SUSTAINABILITY
– Provided the project outcome as environmentally friendly as possible.

SOCIAL SUSTAINABILITY
– Provided the project outcome with a significant added value for the customers,
– Provided the project outcome as innovative as possible for the customers,
– Solved existing problems of the customers,

– Satisfied the needs of the customers.

7. PEOPLE Results: What did the project achieve regarding the expectations and the satisfaction of employees involved concerning project sustainability?

To what extent did the project achieve the satisfaction of the employees involved?

ECONOMIC SUSTAINABILITY
– The project was organized in an economically efficient way.

ENVIRONMENTAL SUSTAINABILITY
– Project execution was as environmentally friendly as possible.

SOCIAL SUSTAINABILITY
– The project ensured an adequate working environment.

8. RESULTS OF OTHER PARTIES INVOLVED: What did the project achieve regarding the expectations and the satisfaction of other stakeholders concerning project sustainability?

Who are the most important stakeholders of the project?

List of stakeholders:
– ……..
– ……..
– ……..

To what extent did the project achieve the satisfaction of other stakeholders?

ECONOMIC SUSTAINABILITY
– Provided the project outcome at a suitable value-price relation.

ENVIRONMENTAL SUSTAINABILITY
– Provided the project outcome as environmentally friendly as possible.

SOCIAL SUSTAINABILITY
– Provided the project outcome with a significant added value,
– Provided the project outcome as innovative as possible,
– Solved existing problems of the stakeholders,
– Satisfied the needs of the stakeholders.

9. KEY PERFORMANCE AND PROJECT RESULTS: What did the project achieve regarding the intended project results concerning project sustainability?

To what extent did the project achieve the project goals taking into account the project goals identified in the criterion 1?

ECONOMIC SUSTAINABILITY
Return on Investment:
– Direct financial benefit/profit,
– Net Present Value,
– Cost/benefit ratio,
– Profitability index,
– Internal rate of return.

Meeting the project triangle:
– Meeting the deadline,
– Meeting the budget,
– Meeting the quality of the project outcome.

Business Agility:
– Agility/Flexibility in the project execution,
– Agility/Flexibility in the business operation.

ENVIRONMENTAL SUSTAINABILITY

Transport:
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Water:
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Materials:
– Minimize the waste of Materials,
– Apply reusable Materials,
– Use of Materials with less energy consumption.

SOCIAL SUSTAINABILITY
Labor Practices and Decent Work:
– Minimize Health and Safety Risks,
– Create new jobs for local people,
– Equal opportunities for employees.

Learning organization and knowledge management:
– Accumulation and documentation of project management knowledge.

Human Rights:
– Respect for Human Right.

Social development:
– Contribute to social development,
– Solve existing social problems,
– Satisfy the needs of the local society,
– Contribute to social wealth.

To what extent are the project results characterized by following statements?

INNOVATION
– Technical innovation in the product/service/construction/other project outcome,
– Process innovation in the project outcome,
– Marketing innovation in the project outcome.

CREATIVITY
– Creativity tools and technics are applied in the idea generation during the planning phase,
– Business and financial problems have been identified,
– Creative solutions for identified problems have been developed,
– Opportunities and threats have been identified and these have been used in the construction of the project strategy.

Case studies using the Project Sustainability Excellence Model

Research methodology
The methodology can be divided into 2 main parts. First the theory of the selected topic was analyzed. This led to the development of an integrated model for assessing organizational performance through projects focusing on sustainability, creativity and innovation in project management. Using the model case studies were carried out. The preferred method of data collection was the personal structured interview with selected project- and functional managers. This method enabled the collection of detailed information about the topic. It also assured that answers were reliably collected. Moreover, credible comparisons were drawn between sample subgroups.

Four organizations were selected for the personal interviews. Both for-profit and non-profit organizations' projects were analyzed.

The first organization is the mayor's office in a small Hungarian city. The mission of the mayor's office is to provide public duties and services, with a main focus on town-development, environmental protection, development and maintenance of public places, public transport, support of sports, arts, healthcare and education. Town development projects like development of public and social spaces, kindergarten reconstruction and renovation of historic buildings were analyzed.

The second organization was a small, privately owned Hungarian company operating in the construction industry. Projects like construction of houses as well as commercial and industrial buildings were selected to be analyzed.

The third company is a German-Hungarian enterprise, one of the world's leading suppliers for the pharmaceutical industry. Nowadays the company employs more than 550 people. Software development, competence center development as well as transport optimization projects were analyzed.

The fourth organization is also a German-Hungarian enterprise operating in the Hungarian market. It was established at the beginning of the 1990s and today employs more than 800 people. The company focuses on the development and production of complex wiring systems for the automotive industry. Product and service development projects were analyzed.

Research results
Project- and functional managers of the selected organizations were interviewed. The answers were measured on a 5 grade scale. Scores of the dimensions were calculated as follows:

$$CSD = MSD \frac{CMSD}{MOSD}$$

CSD= Calculated Score of the Dimension using the PSEM
MSD= Measured Score of the Dimension (Sum of the points given by the interview partners to the questions of the dimension within a given criterion).
MOSD= The Maximum Obtainable Score of the Dimension within a given criterion.

CMSD= Calculated Maximum Score of the Dimension (The maximum point of the given criterion divided by the number of the dimensions in the criterion. It assumes that dimensions within the criterion are taken into consideration with the same weight).

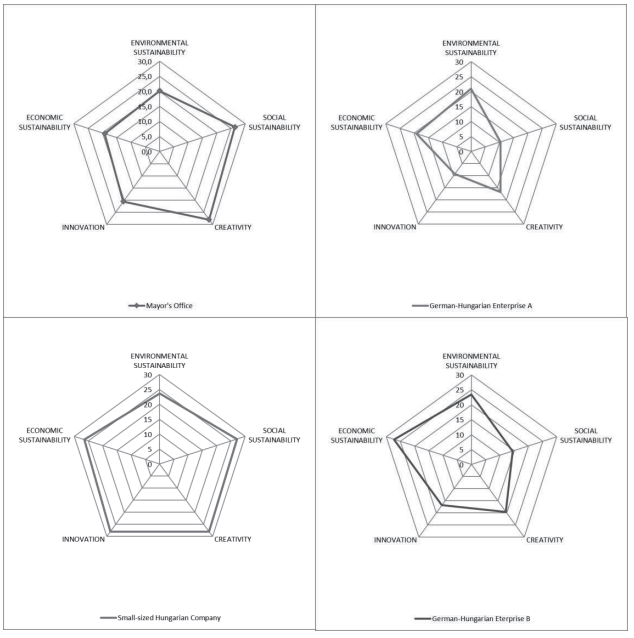
Using the Project Sustainability Excellence Model, the sustainability, innovation and creativity profile of the organization was created.

To be concise, the paper will focus on how sustainability, innovation and creativity are taken into consideration in setting project goals (criterion 1), what does the project achieve considering customer expectations and satisfaction (criterion 6) and to what extent does the project achieve its goals concerning sustainability (criterion 9).

The following profiles indicate the strengths and weaknesses of the analyzed organizations based on the selected criteria.

Figure 5

The spider diagram of the interviewed organizations based on the project objectives



DIMENSION	CMSD	CSD			
		Mayor's Office	HU SME	G-HU E (A)	G-HU E (B)
ECONOMIC SUSTAINABILITY	28	19,2	23,7	19,2	27,2
ENVIRONMENTAL SUSTAINABILITY	28	20,2	27,2	21	23,4
SOCIAL SUSTAINABILITY	28	26,4	28	10,3	14,6
INNOVATION	28	20,5	28	9,3	16,8
CREATIVITY	28	28	26,4	16,8	19,6
SCORE OF THE CRITERION 1		**114,3**	**133,3**	**76,6**	**101,6**

PROJECT OBJECTIVES: To what extent is sustainability a feature of setting the project objectives?

Figure 5 indicates the importance of the three perspectives of sustainability as well as creativity and innovation in setting the project objectives.

In the case of the *Mayor's office*, the social aspect of sustainability plays the most important role. The aim of these projects is to provide products, services or other outcomes with added value for the local community. The interpretation of creativity is mainly related to the invention of the added value of the project characterized by the very limited budget which creates a win-win solution for both society and the mayor's office.

To increase the competitiveness of the *Small Hungarian Company*, attention has to be paid to innovation and creativity. In this case, technical innovation in the product/service/construction, process innovation, as well as marketing innovation are the centers of attention when designing a new project. Significantly less attention is payed to environmental sustainability, which is unfortunately typical of the construction industry.

The *German-Hungarian Enterprise (A and B)* are affiliated firms of German companies. In these cases, projects are mainly initiated and strategically designed by the parent organization. The main focus is on the economic expectations of the stakeholders as well as on the creative components of the project.

CUSTOMER RESULTS: What did the project achieve regarding customer expectations and satisfaction considering project sustainability?

This category focuses on customer satisfaction. It analyses to what extent the project met customer expectations and achieved customer satisfaction related to the sustainability of the project outcome.

Projects of the *Mayor's office* achieved a high level of customer satisfaction from the point of view of sustainability. Economic, environmental as well as social perspectives of sustainability demonstrate an equally high level of customer satisfaction related to the project outcomes.

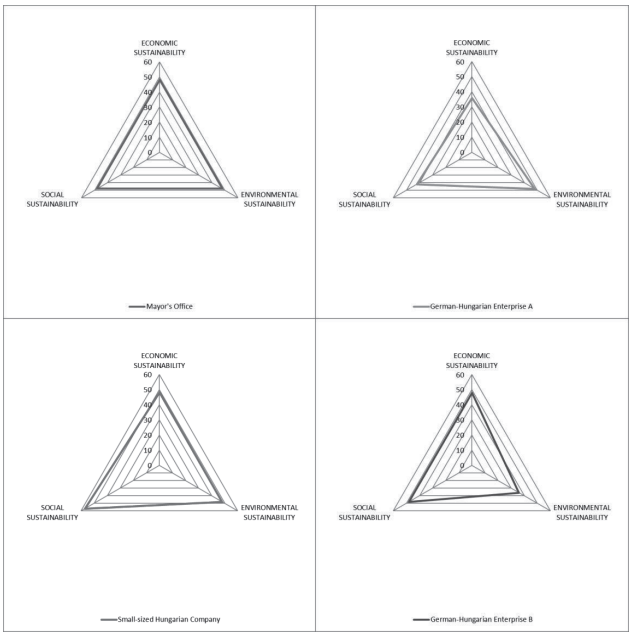
The *Small Hungarian Company* also reached a high level of customer satisfaction. In the project objectives, social sustainability appeared as one of the most important project goals, Figure 6 shows that the company was able to realize this goal and as a for-profit company, this result enables the company to get new orders from these customers.

The *German-Hungarian Enterprise A* also has good results in customer satisfaction, however, the value of economic sustainability is surprisingly lower. The

company should pay more attention to this perspective when launching a new project.

Figure 6

The spider diagram of the interviewed organizations based on the customer results



DIMENSION	CMSD	CSD			
		Mayor's Office	HU SME	G-HU E (A)	G-HU E (B)
ECONOMIC SUSTAINABILITY	60	48	48	36	48
ENVIRONMENTAL SUSTAINABILITY	60	48	48	48	36
SOCIAL SUSTAINABILITY	60	48	57	42	48
SCORE OF THE CRITERION 6		**144**	**153**	**126**	**132**

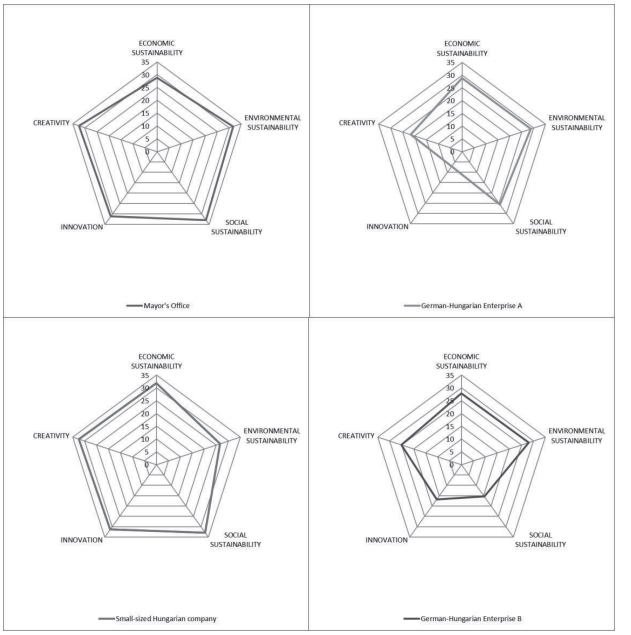
At the *German-Hungarian Enterprise B* looking at the goals in category 1, we can state that the economic and environmental aspects of sustainability are more highlighted than social ones. Regarding customer results, customer satisfaction level is higher with regard to the economic and social perspectives of sustainability than with regard to environmental aspect. This indicates that the company should pay more attention to environmental protection considering that customer expectations toward this perspective of sustainability.

KEY PERFORMANCE AND PROJECT RESULTS: What did the project achieve regarding the intended project results concerning project sustainability?

This dimension indicates what the project realized concerning sustainability. It is important to evaluate the success of the project execution. The main goals of the project were and the extent to which the projects realized these goals must be taken into consideration (Figure 7).

Figure 7

The spider diagram of the interviewed organizations based on key performance and project results



DIMENSION	CMSD	CSD			
		Mayor's Office	HU SME	G-HU E (A)	G-HU E (B)
ECONOMIC SUSTAINABILITY	36	28,8	31,9	28,8	27,8
ENVIRONMENTAL SUSTAINABILITY	36	31,6	26,6	28,8	28,1
SOCIAL SUSTAINABILITY	36	32,9	32,9	25,7	15,4
INNOVATION	36	31,2	31,2	7,2	16,8
CREATIVITY	36	32,4	32,4	21,6	25,2
SCORE OF THE CRITERION 9		**156,9**	**155**	**112,1**	**113,3**

Projects of the *Mayor's office* preferred social sustainability and creativity when setting goals. The project results show that these projects match these goals. The analyzed projects exhibit a high level of project success regarding project sustainability.

Projects at the *Small Hungarian Company* also show very good results regarding sustainability, however, the results from the point of view of environmental sustainability should be developed more in the future.

Projects at the *German-Hungarian Enterprise A* demonstrate good results from the three perspectives of sustainability. Results regarding creativity and innovation are lower.

The *German-Hungarian Enterprise B* has successful projects regarding economic and environmental

sustainability. Other aspects should be investigated where development possibilities arise.

Practical applications, limitations and further research development

In the first part of the research program, a model for assessing project sustainability was developed. The Project Sustainability Excellence Model enables companies as well as consultants to evaluate projects with regards to sustainability, innovation and creativity. Using the model, strengths and weaknesses of the analyzed project can be identified and based on these results action plans can be developed in order to improve the project management system of the organization.

This paper aimed to introduce the Project Sustainability Excellence Model. Practical applications of the model were presented through case studies that analyzed local development projects. After completing this research, the new challenge is to carry out a quantitative empirical research utilizing the standardized questionnaire of the Project Sustainability Excellence Model. Building up an international database, quantitative analyses will be applied in order to validate the usefulness and the standardization of the instrument.

The usage of PSEM is not limited to development projects. By analogy with the Project Excellence Award and the related competition a Project Sustainability Excellence Award could be established. For this the application and assessment process, and other requirements such as categorization and fees should be developed and assessors should be trained in order to provide uniform conditions for applicants.

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